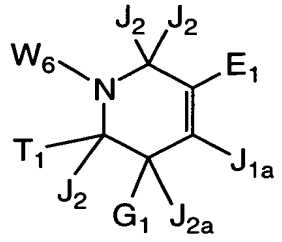
What is Claimed Is:

1. A composition comprising a compound of formula (IX):



(IX)

wherein

E_1 is $-(CR_1R_1)_{m1}W_1$;

G_1 is N_3, -CN, -OH, $-OR_{6a}$, $-NO_2$, or $-(CR_1R_1)_{m1}W_2$;

T_1 is $-NR_1W_3$, or a heterocycle;

J_{1a} are independently R_1, Br, Cl, F, I, CN, NO_2 or N_3;

J_2 and J_{2a} are independently H or R_1;

R_1 is independently H or alkyl of 1 to 12 carbon atoms;

R_2 is independently R_3 or R_4 wherein each R_4 is independently substituted with 0 to 3 R_3 groups;

R_3 is independently F, Cl, Br, I, -CN, N_3, $-NO_2$, $-OR_{6a}$, $-OR_1$, $-N(R_1)_2$, $-N(R_1)(R_{6b})$, $-N(R_{6b})_2$, $-SR_1$, $-SR_{6a}$, $-S(O)R_1$, $-S(O)_2R_1$, $-S(O)OR_1$, $-S(O)OR_{6a}$, $-S(O)_2OR_1$, $-S(O)_2OR_{6a}$, $-C(O)OR_1$, $-C(O)R_{6c}$, $-C(O)OR_{6a}$, $-OC(O)R_1$, $-N(R_1)(C(O)R_1)$, $-N(R_{6b})(C(O)R_1)$, $-N(R_1)(C(O)OR_1)$, $-N(R_{6b})(C(O)OR_1)$, $-C(O)N(R_1)_2$, $-C(O)N(R_{6b})(R_1)$, $-C(O)N(R_{6b})_2$, $-C(NR_1)(N(R_1)_2)$, $-C(N(R_{6b}))(N(R_1)_2)$, $-C(N(R_1))(N(R_1)(R_{6b}))$, $-C(N(R_{6b}))(N(R_1)(R_{6b}))$, $-C(N(R_1))(N(R_{6b})_2)$, $-C(N(R_{6b}))(N(R_{6b})_2)$, $-N(R_1)C(N(R_1))(N(R_1)_2)$, $-N(R_1)C(N(R_1))(N(R_1)(R_{6b}))$, $-N(R_1)C(N(R_{6b}))(N(R_1)_2)$, $-N(R_{6b})C(N(R_1))(N(R_1)_2)$, $-N(R_{6b})C(N(R_{6b}))(N(R_1)_2)$, $-N(R_{6b})C(N(R_1))(N(R_1)(R_{6b}))$, $-N(R_1)C(N(R_{6b}))(N(R_1)(R_{6b}))$, $-N(R_1)C(N(R_1))(N(R_{6b})_2)$, $-N(R_{6b})C(N(R_{6b}))(N(R_1)(R_{6b}))$, $-N(R_{6b})C(N(R_1))(N(R_{6b})_2)$, $-N(R_1)C(N(R_{6b}))(N(R_{6b})_2)$, $-N(R_{6b})C(N(R_{6b}))(N(R_{6b})_2)$, =O, =S, $=N(R_1)$ or $=N(R_{6b})$;

R_4 is independently alkyl of 1 to 12 carbon atoms, alkenyl of 2 to 12 carbon atoms, or alkynyl of 2 to 12 carbon atoms;

R_5 is independently R_4 wherein each R_4 is substituted with 0 to 3 R_3

groups;

R_{5a} is independently alkylene of 1 to 12 carbon atoms, alkenylene of 2 to 12 carbon atoms, or alkynylene of 2-12 carbon atoms any one of which alkylene, alkenylene or alkynylene is substituted with 0-3 R_3 groups;

R_{6a} is independently H or an ether- or ester-forming group;

R_{6b} is independently H, a protecting group for amino or the residue of a carboxyl-containing compound;

R_{6c} is independently H or the residue of an amino-containing compound;

W_1 is a group comprising an acidic hydrogen, a protected acidic group, or an R_{6c} amide of the group comprising an acidic hydrogen;

W_2 is a group comprising a basic heteroatom or a protected basic heteroatom, or an R_{6b} amide of the basic heteroatom;

W_3 is W_4 or W_5;

W_4 is R_5 or $-C(O)R_5$, $-C(O)W_5$, $-SO_2R_5$, or $-SO_2W_5$;

W_5 is carbocycle or heterocycle wherein W_5 is independently substituted with 0 to 3 R_2 groups;

W_6 is $-R_5$, $-W_5$, $-R_{5a}W_5$, $-C(O)OR_{6a}$, $-C(O)R_{6c}$, $-C(O)N(R_{6b})_2$, $-C(NR_{6b})(N(R_{6b})_2)$, $-C(NR_{6b})(N(H)(R_{6b}))$, $-C(N(H)(N(R_{6b})_2)$, $-C(S)N(R_{6b})_2$, or $-C(O)R_2$; and

each m_1 is independently an integer from 0 to 2;

provided, however, that compounds are excluded wherein J_{1a} is H, each J_2 is H, J_{2a} is H and T_1 is -N(H)(Ac) and:

E_1 is $-CO_2H$ or $-CO_2CH_3$,
G_1 is -OBoc, and
W_6 is Boc;

E_1 is $-CO_2H$ or $-CO_2CH_3$,
G_1 is -OH, and
W_6 is H;

E_1 is $-CO_2H$, $-CO_2CH_3$ or $-CO_2Bn$
G_1 is -OH, and
W_6 is Boc;

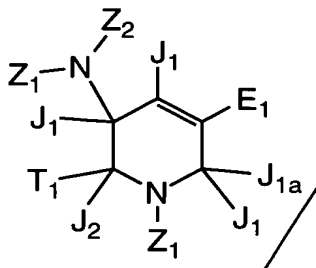
E_1 is $-CONH_2$,
G_1 is -OH, and
W_6 is Boc or H;

E_1 is $-CO_2H$ or $-CO_2CH_3$,
G_1 is OH, and
W_6 is Bn; or

E_1 is $-CO_2H$ or $-CO_2CH_3$,
G_1 is -OH, and
W_6 is $-CH_2CH(OH)CH_2(OH)$;

wherein Bn is benzyl and Boc is $-CO_2C(CH_3)_3$;
and the salts, solvates, resolved enantiomers and purified diastereomers thereof.

2. A composition comprising a compound of formula (X):



(X)

wherein

one Z_1 is W_6 and the other Z_1 is G_1;

Z_2 is H or W_6;

E_1 is $-(CR_1R_1)_{m1}W_1$;

G_1 is -OH, $-OR_{6a}$ or $-(CR_1R_1)_{m1}W_2$;

T_1 is $-NR_1W_3$ or a heterocycle;

J_1 and J_{1a} are independently R_1, Br, Cl, F, I, CN, NO_2 or N_3;

J_2 is H or R_1;

R_1 is independently H or alkyl of 1 to 12 carbon atoms;

R_2 is independently R_3 or R_4 wherein each R_4 is independently substituted with 0 to 3 R_3 groups;

R_3 is independently F, Cl, Br, I, -CN, N_3, $-NO_2$, $-OR_{6a}$, $-OR_1$, $-N(R_1)_2$, $-N(R_1)(R_{6b})$, $-N(R_{6b})_2$, $-SR_1$, $-SR_{6a}$, $-S(O)R_1$, $-S(O)_2R_1$, $-S(O)OR_1$, $-S(O)OR_{6a}$, $-S(O)_2OR_1$, $-S(O)_2OR_{6a}$, $-C(O)OR_1$, $-C(O)R_{6c}$, $-C(O)OR_{6a}$, $-OC(O)R_1$, $-N(R_1)(C(O)R_1)$, $-N(R_{6b})(C(O)R_1)$, $-N(R_1)(C(O)OR_1)$, $-N(R_{6b})(C(O)OR_1)$, $-C(O)N(R_1)_2$, $-C(O)N(R_{6b})(R_1)$, $-C(O)N(R_{6b})_2$, $-C(NR_1)(N(R_1)_2)$, $-C(N(R_{6b}))(N(R_1)_2)$, $-C(N(R_1))(N(R_1)(R_{6b}))$, $-C(N(R_{6b}))(N(R_1)(R_{6b}))$, $-C(N(R_1))(N(R_{6b})_2)$, $-C(N(R_{6b}))(N(R_{6b})_2)$, $-N(R_1)C(N(R_1))(N(R_1)_2)$, $-N(R_1)C(N(R_1))(N(R_1)(R_{6b}))$, $-N(R_1)C(N(R_{6b}))(N(R_1)_2)$, $-N(R_{6b})C(N(R_1))(N(R_1)_2)$, $-N(R_{6b})C(N(R_{6b}))(N(R_1)_2)$, $-N(R_{6b})C(N(R_1))(N(R_1)(R_{6b}))$, $-N(R_1)C(N(R_{6b}))(N(R_1)(R_{6b}))$, $-N(R_1)C(N(R_1))(N(R_{6b})_2)$, $-N(R_{6b})C(N(R_{6b}))(N(R_1)(R_{6b}))$, $-N(R_{6b})C(N(R_1))(N(R_{6b})_2)$, $-N(R_1)C(N(R_{6b}))(N(R_{6b})_2)$, $-N(R_{6b})C(N(R_{6b}))(N(R_{6b})_2)$, =O, =S, $=N(R_1)$ or $=N(R_{6b})$;

R_4 is independently alkyl of 1 to 12 carbon atoms, alkenyl of 2 to 12 carbon atoms, or alkynyl of 2 to 12 carbon atoms;

R_5 is independently R_4 wherein each R_4 is substituted with 0 to 3 R_3 groups;

R_{5a} is independently alkylene of 1 to 12 carbon atoms, alkenylene of 2 to 12 carbon atoms, or alkynylene of 2-12 carbon atoms any one of which alkylene, alkenylene or alkynylene is substituted with 0-3 R_3 groups;

R_{6a} is independently H or an ether- or ester-forming group;

R_{6b} is independently H, a protecting group for amino or the residue of a carboxyl-containing compound;

R_{6c} is independently H or the residue of an amino-containing compound;

W_1 is a group comprising an acidic hydrogen, a protected acidic group, or an R_{6c} amide of the group comprising an acidic hydrogen;

W_2 is H or a group comprising a basic heteroatom or a protected basic heteroatom, or an R_{6b} amide of the basic heteroatom;

W_3 is W_4 or W_5;

W_4 is R_5 or $-C(O)R_5$, $-C(O)W_5$, $-SO_2R_5$, or $-SO_2W_5$;

W_5 is carbocycle or heterocycle wherein W_5 is independently substituted with 0 to 3 R_2 groups;

W_6 is $-R_5$, $-W_5$, $-R_{5a}W_5$, $-C(O)OR_{6a}$, $-C(O)R_{6c}$, $-C(O)N(R_{6b})_2$, $-C(NR_{6b})(N(R_{6b})_2)$, $-C(NR_{6b})(N(H)(R_{6b}))$, $-C(N(H)(N(R_{6b})_2)$, $-C(S)N(R_{6b})_2$, or $-C(O)R_2$;

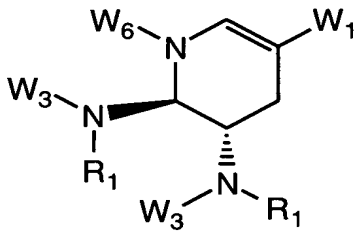
each m_1 is independently an integer from 0 to 2;

and the salts, solvates, resolved enantiomers and purified diastereomers thereof.

3. The composition of Claim 1 wherein further excluded are compounds wherein G_1 is -OH, -OR_{6a}.

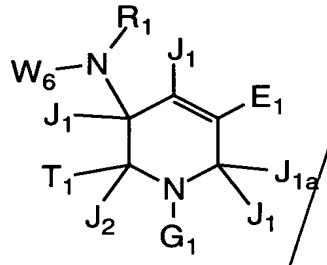
4. The composition of Claim 1 wherein G_1 is -NR_1W_3.

5. The composition of Claim 1 wherein the compound is of the formula:



(XI)

6. The composition of Claim 2 wherein the compound is of the formula:

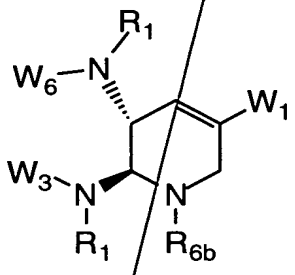


(XII)

7. The composition of Claim 6 wherein G_1 is R_{6b}.

8. The composition of Claim 6 wherein R_1 is H.

9. The composition of Claim 2 wherein the compound is of the formula:



(XIII)

10. The composition of Claim 1 or 2 wherein R_{6a} is H or a protecting group for hydroxyl or thio.

11. The composition of Claim 1 or 2 wherein W_6 is C_1-C_3 alkyl substituted with 1 to 3 OR_{6a} or SR_{6a}, which OR_{6a} or SR_{6a} groups are stable to hydrolysis in gastrointestinal fluid.

12. The composition of Claim 1 or 2 wherein W_6 is $-(CH_2)_{m1}CH((CH_2)_{m3}R_3)_2$, $-(CH_2)_{m1}C((CH_2)_{m3}R_3)_3$; $-(CH_2)_{m1}CH((CH_2)_{m3}R_{5a}W_5)_2$; $-(CH_2)_{m1}CH((CH_2)_{m3}R_3)((CH_2)_{m3}R_{5a}W_5)$; $-(CH_2)_{m1}C((CH_2)_{m3}R_3)_2(CH_2)_{m3}R_{5a}W_5)$, $(CH_2)_{m1}C((CH_2)_{m3}R_{5a}W_5)_3$ or $-(CH_2)_{m1}C((CH_2)_{m3}R_3)((CH_2)_{m3}R_{5a}W_5)_2$ and m_3 is an integer from 1 to 3.

13. The composition of Claim 1 or 2 wherein W_6 is $-R_5$, $-W_5$ or $-R_{5a}W_5$.

14. The composition of Claim 1 or 2 wherein W_6 is R_5.

15. The composition of Claim 14 wherein said R_5 is R_4 substituted with 0 to 3 $-OR_1$.

16. The composition of Claim 14 wherein said R_5 is R_4 substituted with 0 to 3 $-NO_2$ or N_3 groups.

17. The composition of Claim 15 wherein said $-OR_1$ is present and at least one of said R_1 is C_4-C_{12}.

18. The composition of Claim 1 or 2 wherein W_6 is a branched chain R_5 group.

19. The composition of Claim 18 wherein said R_5 is a branched R_4 group.

20. The composition of Claim 1 or 2 wherein W_6 is R_{5e} wherein R_{5e} is normal or secondary alkyl of 1 to 12 carbon atoms substituted with 1-3 OR_{1a} or SR_{1a} wherein R_{1a} is C_1-C_4 alkyl.

21. The composition of Claim 20 provided that when W_6 is R_5 substituted

with 1 to 3 R_3 groups and at least one R_3 group is OH, COOH, NH_2, C(O)H, $C(O)NH_2$, $S(O)_2OH$, S(O)OH, N(H)(C(O)OH), $C(N(H))NH_2$, $N(H)(C(NH_2)N(H))$, =O, or =N(H), then said R_5 is substituted with a single OH, COOH, NH_2, C(O)H, $C(O)NH_2$, $S(O)_2OH$, S(O)OH, N(H)(C(O)OH), $C(N(H))NH_2$, $N(H)(C(NH_2)N(H))$, =O, or =NH group.

22. The composition of Claim 21 wherein said R_5 is alkyl of 4 to 8 carbon atoms substituted with 0 to 3 R_3 groups.

23. The composition of Claim 21 wherein said R_5 is substituted with 0 to 2 R_3 groups.

24. The composition of Claim 23 wherein said R_5 is substituted with 1 to 2 R_3 groups and at least one said R_3 group is -OH, -COOH, $-NH_2$, -C(O)H, $-C(O)NH_2$, $-S(O)_2OH$, -S(O)OH, -N(H)(C(O)OH), $-C(N(H))NH_2$, $-N(H)C((NH_2)N(H))$, =O, or =NH.

25. The composition of Claim 1 or 2 wherein W_6 is R_4 having 1 to 7 carbon atoms.

26. The composition of Claim 1 or 2 wherein said W_6 is not C_1-C_3 alkyl substituted with OH or OH protected with an aralkyl, acyl, a silicon protecting group or a tetrahydropyran.

27. The composition of Claim 26 wherein the aralkyl protecting group is benzyl, triphenylmethyl or diphenylmethyl; the acyl group is acetyl; and the silicon protecting group is trimethylsilyl.

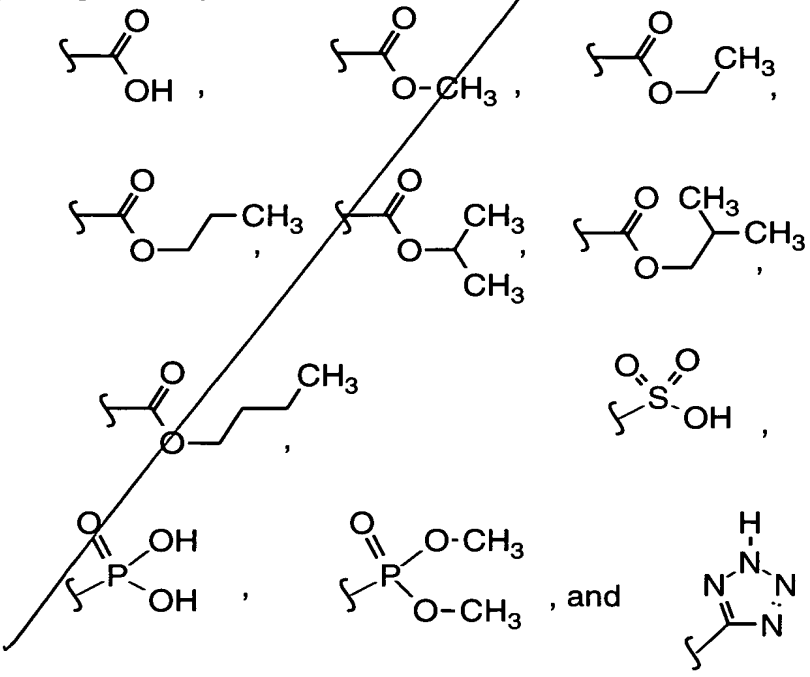
28. The composition of Claim 1 wherein
G_1 is $-NHR_1$, $-N(R_{6b})(R_1)$, $-N(R_{6b})_2$, -N(H)(R5), $-N(R_{6b})(R_5)$, $-N(R_5)_2$-$C(NH)(NH_2)$, $-N(R_1)C(NR_1)(NR_1R_3)$, $-NHC(NH)(NHR_3)$, $-NHC(NH)(NHR_1)$, $-NHC(NH)NH_2$), $-CH(CH_2NHR_1)(CH_2OH)$, $-CH(CH_2NHR_1)(CH_2NHR_1)$, $-CH(NHR_1)-(CR_1R_1)_{m2}-CH(NHR_1)R_1$, $-CH(OH)-(CR_1R_1)_{m2}-CH(NHR_1)R_1$, or $-CH(NHR_1)-(CR_1R_1)_{m2}-CH(OH)R_1$, $-(CR_1R_1)_{m2}$-S-$C(NH)NH_2$, $-N=C(NHR_1)(R_3)$ or $-N=C(NHR_1)(R_1)$; and m2 is

independently an integer from 0 to 1.

29. The composition of Claim 2 wherein
G_1 is H, -NHR_1, -$N(R_{6b})(R_1)$, -$N(R_{6b})_2$, -$N(H)(R_5)$, -$N(R_{6b})(R_5)$, -$N(R_5)_2$, -$C(NH)(NH_2)$, -$CH(CH_2NHR_1)(CH_2OH)$, -$CH(CH_2NHR_1)(CH_2NHR_1)$, -$CH(NHR_1)$-$(CR_1R_1)_{m2}$-$CH(NHR_1)R_1$, -$CH(OH)$-$(CR_1R_1)_{m2}$-$CH(NHR_1)R_1$, or -$CH(NHR_1)$-$(CR_1R_1)_{m2}$-$CH(OH)R_1$, or -$(CR_1R_1)_{m2}$-S-$C(NH)NH_2$; and m2 is independently an integer from 0 to 1.

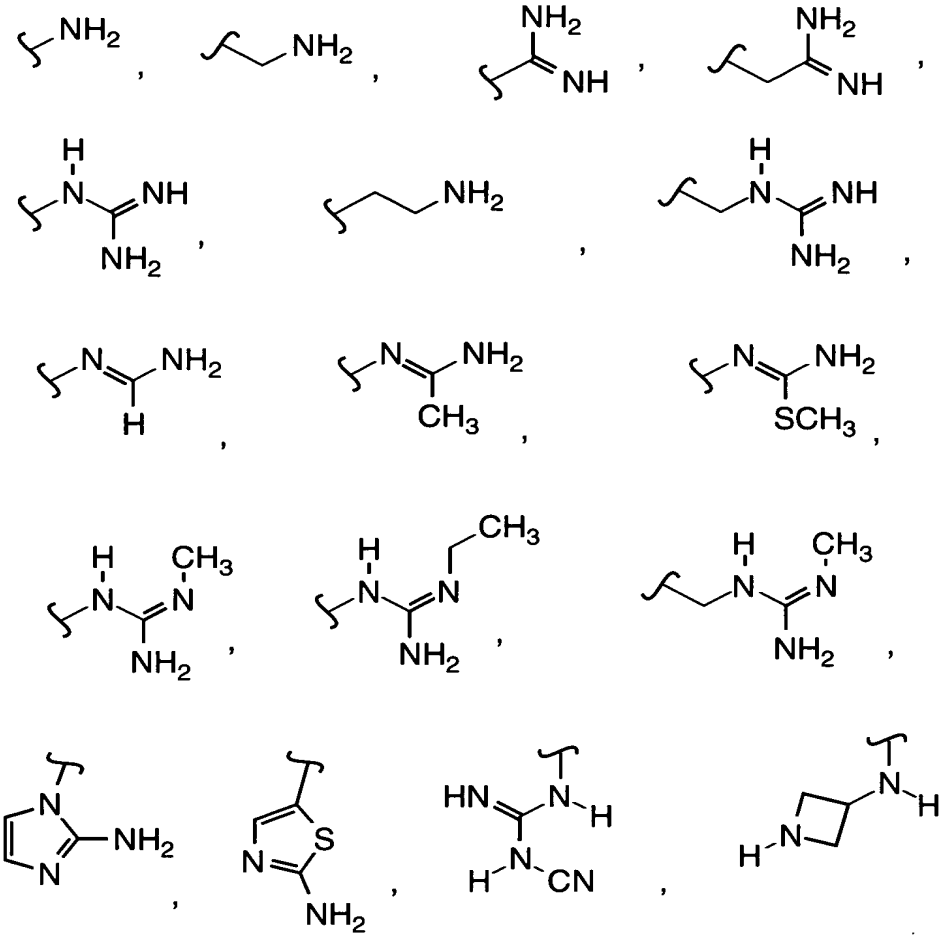
30. The composition of Claim 1 or 2 wherein W_1 is -CO_2R_1.

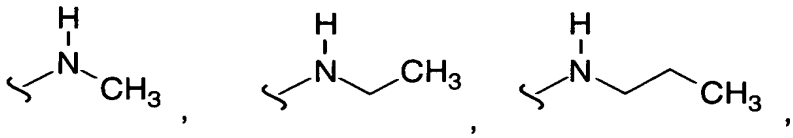
31. The composition of Claim 1 or 2 wherein E_1 is selected from the group consisting of: phenethyl ester of carboxyl,

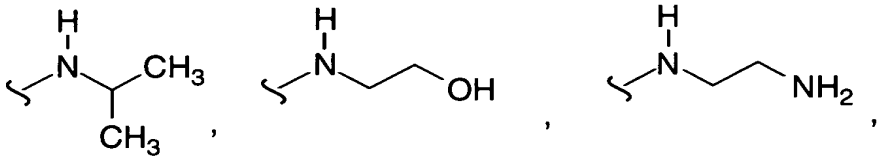


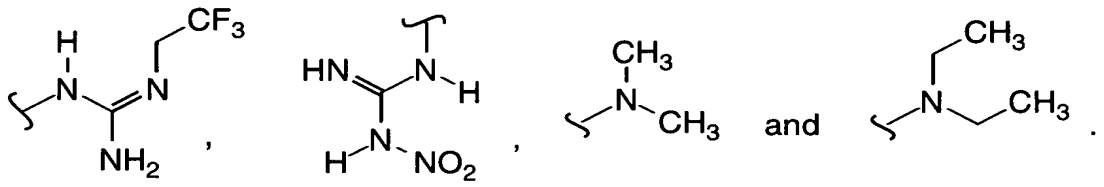
32. The composition of Claim 1 wherein G_1 is amino, amidino or guanidino, or amino, amidino or guanidino substituted with C_1 - C_6 alkyl.

33. The composition of Claim 1 wherein G_1 is selected from the group consisting of: C_1-C_6 monoalkylamine,





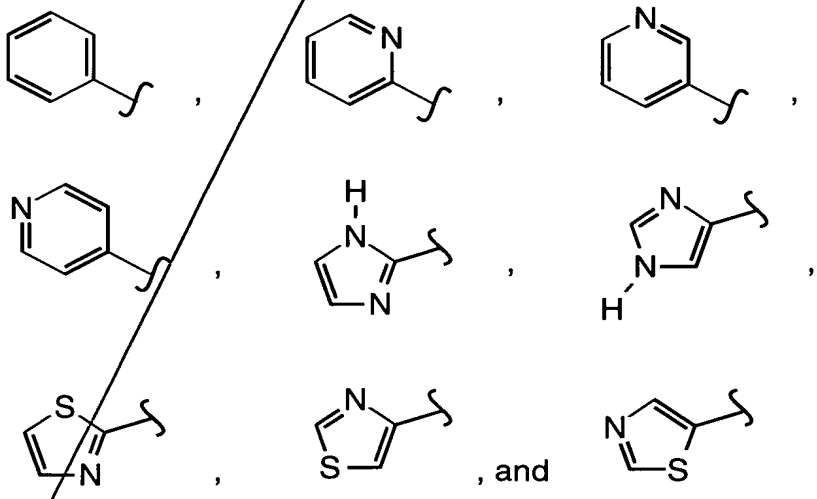




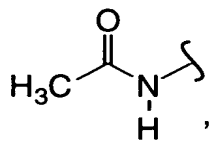
34. The composition of Claim 1 or 2 wherein W_3 is -C(O)-R_5.

35. The composition of Claim 1 or 2 wherein W_6 is an alkyl of 1 to 6 carbon atoms substituted with 0 to 3 F, Br, Cl, N_3, NO_2 or CN.

36. The composition of Claim 1 or 2 wherein W_5 is selected from the group consisting of:



37. The composition of Claim 1 or 2 wherein T_1 is selected from the group consisting of: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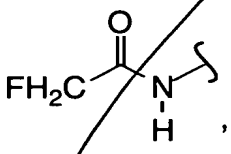
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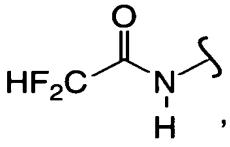
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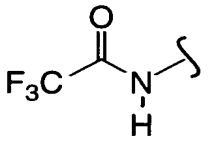
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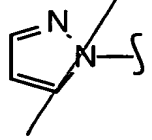
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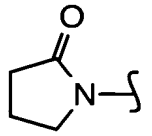
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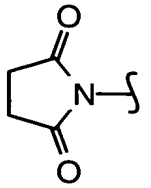
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38. The composition of Claim 2 wherein J_1 is H, C_1-C_2 alkyl or F.

~~39. The composition of Claim 1 or 2 wherein J_{1a} is H.~~

40. The composition of Claim 1 wherein J_{2a} is H or C_1-C_2 alkyl.

41. The composition of Claim 1 wherein J_{2a} is H.

42. The composition of Claim 1 or 2 wherein W_6 is secondary or tertiary alkyl containing 4 to 12 carbon atoms which W_6 is unsubstituted or substituted with NO_2, N_3, F, Br, Cl, OR_1 or SR_1.

43. The composition of Claim 42 which is substituted with nitro, azido or F.

44. The composition of Claim 1 or 2 wherein W_6 is $-(CH_2)_{m1}CH(R_1)_aW_7$ wherein W_7 is an alkyl of 1 to 4 carbon atoms substituted with 0 to 3 R_3, a is 0 or 1, and when a is 0 then W_7 is joined to CH by a double bond.

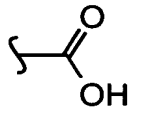
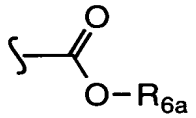
45. The composition of Claim 44 wherein W_6 is $-CH_2CH(R_1)W_7$.

46. The composition of Claim 45 wherein W_7 is $-CH_2OR_1$ and R_1 is C_4-C_{12} alkyl.

47. The composition of Claim 1 or 2 wherein W_6 is $(CH_3CH_2)_2CH$-, $(CH_3CH_2)(CH_3)(H)C$-, $(CH_3)_2(H)C$-, $(CH_3)_2CHCH_2$-, $CH_3(CH_2)_4$-, $CH_3(CH_2)_3$-, $CH_3(CH_2)_2$-, $(CH_3CH_2)(CH_3)_2C$-, $(CH_3CH_2)(CH_3CH_2)(H)C$-,

$(CH_3CH_2CH_2)(CH_3CH_2)(H)C$-, $(CH_3CH_2CH_2)(CH_3CH_2CH_2)(H)C$-, $(PhCH_2CH_2)(CH_3CH_2)(H)C$-, $(PhCH_2CH_2)(PhCH_2CH_2)(H)C$-, $(PhCH_2)(CH_3CH_2)(H)C$-, $(PhCH_2)(PhCH_2)(H)C$-,cyclohexyl- or cyclopentyl-.

48. The composition of Claim 1 wherein:
E_1 is -$COOR_5$,


,

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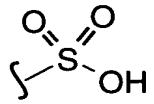
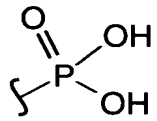
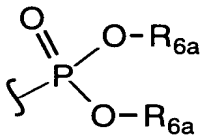
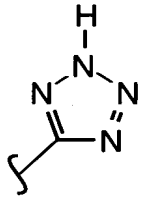
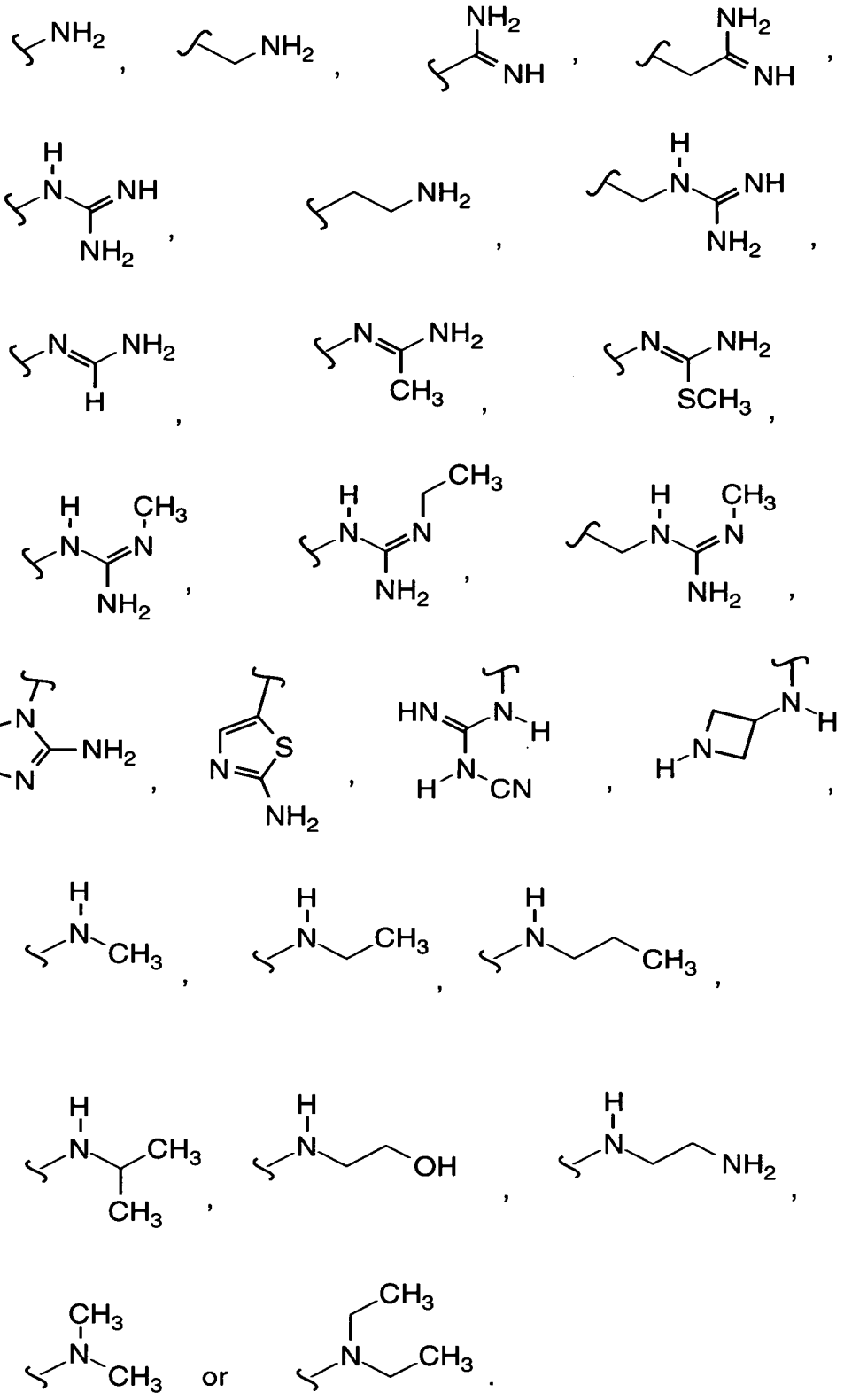

,


,

, or

;

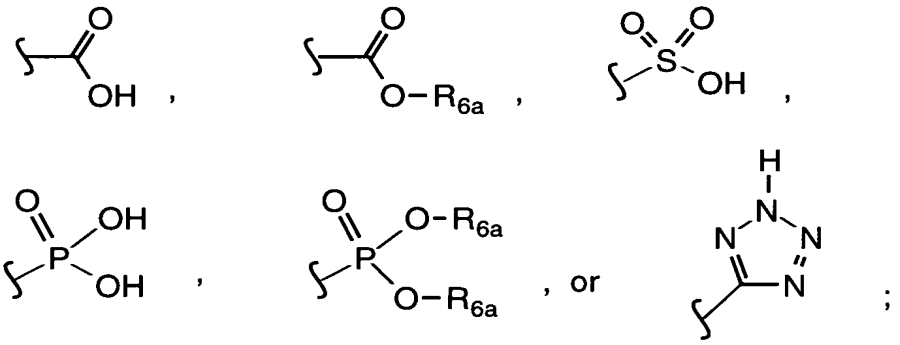
G_1 is -$N(R_5)_2$, -$NH(R_5)_2$,



and W_6 is an alkyl of 1 to 12 carbon atoms, alkenyl of 2 to 12 carbon atoms, or alkynyl of 2 to 12 carbon atoms and W_6 is substituted with 0 to 3 groups selected from the group consisting of F, Cl, Br, I, -CN, NO_2, N_3, $-OR_{6a}$, $-NR_{6b}R_{6b}$, $-SR_{6a}$, $-O-C(O)R_{6a}$, or $-NR_{6b}-C(O)R_{6a}$.

49. The composition of Claim 48 wherein W_6 is selected from the group consisting of $(CH_3CH_2)_2CH-$, $(CH_3CH_2)(CH_3)(H)C-$, $(CH_3)_2(H)C-$, $(CH_3)_2CHCH_2-$, $CH_3(CH_2)_4-$, $CH_3(CH_2)_3-$, $CH_3(CH_2)_2-$, $(CH_3CH_2)(CH_3)_2C-$, $(CH_3CH_2)(CH_3CH_2)(H)C-$, $(CH_3CH_2CH_2)(CH_3CH_2)(H)C-$, $(CH_3CH_2CH_2)(CH_3CH_2CH_2)(H)C-$, $(PhCH_2CH_2)(CH_3CH_2)(H)C-$, $(PhCH_2CH_2)(PhCH_2CH_2)(H)C-$, $(PhCH_2)(CH_3CH_2)(H)C-$, $(PhCH_2)(PhCH_2)(H)C-$,cyclohexyl- or cyclopentyl-.

50. The composition of Claim 2 wherein:
E_1 is $-COOR_5$,



G_1 is H; and
W_6 is an alkyl of 1 to 12 carbon atoms, alkenyl of 2 to 12 carbon atoms, or alkynyl of 2 to 12 carbon atoms and W_6 is substituted with 0 to 3 groups selected from the group consisting of F, Cl, Br, I, -CN, NO_2, N_3, $-OR_{6a}$, $-NR_{6b}R_{6b}$, $-SR_{6a}$, $-O-C(O)R_{6a}$, or $-NR_{6b}-C(O)R_{6a}$.

51. The composition of Claim 50 wherein W_6 is selected from the group consisting of $(CH_3CH_2)_2CH-$, $(CH_3CH_2)(CH_3)(H)C-$, $(CH_3)_2(H)C-$, $(CH_3)_2CHCH_2-$, $CH_3(CH_2)_4-$, $CH_3(CH_2)_3-$, $CH_3(CH_2)_2-$, $(CH_3CH_2)(CH_3)_2C-$, $(CH_3CH_2)(CH_3CH_2)(H)C-$, $(CH_3CH_2CH_2)(CH_3CH_2)(H)C-$,

$(CH_3CH_2CH_2)(CH_3CH_2CH_2)(H)C$-, $(PhCH_2CH_2)(CH_3CH_2)(H)C$-, $(PhCH_2CH_2)(PhCH_2CH_2)(H)C$-, $(PhCH_2)(CH_3CH_2)(H)C$-, $(PhCH_2)(PhCH_2)(H)C$-,cyclohexyl- or cyclopentyl-.

52. The composition of Claim 1 or 2 wherein E_1 is -COOH, or a carboxyl ester or carboxylamide that is hydrolyzable *in vivo* to -COOH.

53. The composition of Claim 1 or 2 further comprising a pharmaceutically-acceptable carrier.

54. A compound named in Table 6.

55. A method of inhibiting the activity of neuraminidase comprising the step of contacting a sample suspected of containing neuraminidase with the composition of Claim 1 or 2.